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May 3, 2017

Peter R. Marksteiner
Clerk of the Court
U.S. Court of Appeals for the Federal Circuit
717 Madison Place, NW
Washington, DC 20439

Re: *Amgen v. Sanofi*, No. 17-1480

Dear Mr. Marksteiner:

Pursuant to Fed. R. App. P. 28(j), Appellants submit as supplemental authority this Court's decision in *Nichia Corp. v. Everlight Americas, Inc.*, No. 16-1585 (Fed. Cir. Apr. 28, 2017).

In *Nichia*, this Court reviewed the history of injunctions in patent infringement cases, including *eBay Inc. v. MercExchange, LLC,* 547 U.S. 388 (2006), and expressly held that a patentee "must prove that it meets all four equitable factors" of the *eBay* test to obtain a permanent injunction, Op.21 (citing *i4i Ltd. P'ship v. Microsoft Corp.*, 598 F.3d 831, 861 (Fed. Cir. 2010)). Because the patentee in *Nichia* "failed to establish one of the four equitable factors"—irreparable harm—this Court affirmed the denial of the injunction without even considering the patentee's complaints about another factor—adequacy of legal remedies. Op.19-20, 26.

Nichia is directly relevant here. The district court granted a permanent injunction despite finding that Amgen had failed to establish one of the *eBay* factors—that the public interest not be disserved by an injunction. *See* Appx34¶12. As Appellants explained, that result "facially contradicts" *eBay*'s holding that a patentee "'must demonstrate'" all four factors. Appellants' Br.59; *see also* Reply Br.27-28 (citing *eBay* and *i4i*). Amgen countered that *eBay* "is not reasonably read" to require satisfaction of all four factors and instead recites a "balancing" test. Amgen Br.81. *Nichia* lays that dispute to rest, reaffirming that a patentee "must prove that it meets all four equitable factors" to warrant a permanent injunction. Op.21. That holding was essential to the *Nichia* disposition, affirming the denial of a permanent injunction without even considering the other three factors, including the patentee's arguments about the inadequacy of its remedies at law. And that holding is fatal to the permanent injunction entered below here. Because Amgen "failed to establish one of the four equitable factors," Op.26, the district court's order granting the injunction was legal error and necessarily an abuse of discretion.

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This Court need not reach the propriety of the injunction, because the underlying liability judgment should be vacated or reversed on multiple grounds. *Nichia* makes clear, however, that the permanent injunction cannot stand.

Sincerely,

Paul D. Clement
KIRKLAND & ELLIS LLP
Counsel for Defendants-Appellants

CERTIFICATE OF SERVICE

I hereby certify that on May 3, 2017, I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the Federal Circuit by using the CM/ECF system. I certify that all participants in this case are registered CM/ECF users and that service will be accomplished by the CM/ECF system.

s/Paul D. Clement
Paul D. Clement

United States Court of Appeals for the Federal Circuit

NICHIA CORPORATION,
Plaintiff-Appellant

v.

EVERLIGHT AMERICAS, INC., EVERLIGHT ELECTRONICS CO., LTD.,
Defendants-Cross-Appellants

ZENARO LIGHTING, INC.,
Defendant

2016-1585, 2016-1618

Appeals from the United States District Court for the Eastern District of Texas in No. 2:13-cv-00702-JRG, Judge J. Rodney Gilstrap.

Decided: April 28, 2017

ROBERT P. PARKER, Rothwell, Figg, Ernst & Manbeck, P.C., Washington, DC, argued for plaintiff-appellant. Also represented by MARTIN MOSS ZOLTICK, MICHAEL JONES, DANIEL MCCALLUM, STEVEN PAUL WEIHROUCH.

JERRY ROBIN SELINGER, Patterson & Sheridan LLP, Dallas, TX, argued for defendants-cross-appellants. Also represented by JAYME PARTRIDGE, BARDEN TODD

PATTERSON, Houston, TX; ERIC W. BENISEK, JEFFREY T. LINDGREN, ROBERT MCARTHUR, STEPHEN C. STEINBERG, RICHARD C. VASQUEZ, Vasquez Benisek & Lindgren, LLP, Lafayette, CA.

Before REYNA, HUGHES, and STOLL, *Circuit Judges*.

STOLL, *Circuit Judge*.

Nichia Corporation sued Everlight Electronics Co., LTD., Everlight Americas, INC., and Zenaro Lighting, Inc. (collectively, "Everlight") for infringement of three of its patents. Following a bench trial, the district court found Everlight infringed all three patents and had not proved them invalid. The court denied, however, Nichia's request for a permanent injunction against Everlight. Nichia appeals the district court's refusal to enter an injunction against Everlight. Everlight cross-appeals the court's judgment that it infringes Nichia's patents and that it failed to prove the patents invalid. We affirm.

BACKGROUND

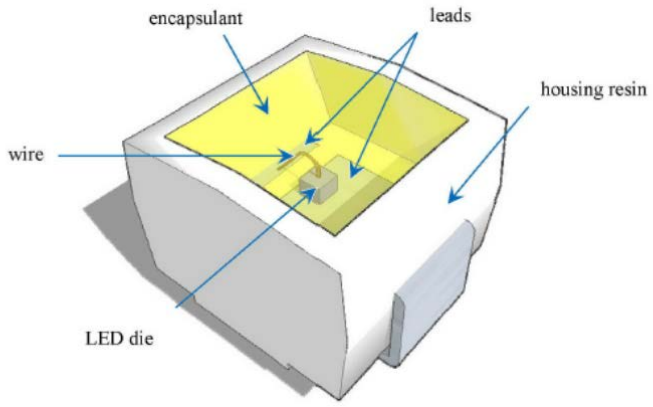
I.

Nichia Corporation is an LED company that manufactures and supplies LEDs in markets around the world. *Nichia Corp. v. Everlight Elecs. Co.*, No. 02:13-CV-702, 2016 WL 310142, at *1 (E.D. Tex. Jan. 25, 2016) ("*Nichia*"). Both parties agree that "Nichia is the world's largest supplier of LEDs." J.A. 2113, ¶ 154. It sells LEDs in America through its subsidiary Nichia America Corp. Nichia also researches and develops LED technology, including the technology disclosed in the three patents Nichia asserted in this case.

Everlight buys chips from suppliers and packages them into LEDs. *Nichia*, 2016 WL 310142, at *1. It sells LEDs in the U.S. directly to customers and through its subsidiaries. *Id.*

II.

Nichia accused Everlight of infringing three of Nichia's patents, U.S. Patent Nos. 8,530,250, 7,432,589, and 7,462,870. All three disclose package designs and methods of manufacturing LED devices. All three patents use a shared set of vocabulary known in the art, as shown below on a common configuration of an LED:



Id. at *4; J.A. 11. The court explained that this LED includes the following parts:

> (i) the "leads," which are used to conduct the electrical current to the LED chip; (ii) the "resin housing," which is made out of a reflective resin and includes a recess in which the LED chip is placed; (iii) the "LED chip" or "LED die" (about the size of a grain of salt), which is mounted in the recess typically by using an adhesive material in a process known as die bonding; (iv) one or more "bond wires" that connect the LED chip to the leads; and (v) an "encapsulation material" that encapsulates the LED chip and protects it from the environment.

Nichia, 2016 WL 310142, at *4.

The LEDs in suit are miniscule; they are typically smaller than 1 millimeter in height. *Id.* They are used in LCD backlights, video displays, automotive applications, and general lighting applications. *Id.*

The court found that LED design technology is a complex technological space, where many design considerations pull in different directions simultaneously. It found that "LED package design involves the simultaneous integration and balancing of multiple design considerations, including electrical, optical, thermal, and mechanical design challenges." *Id.* The court emphasized that:

> [m]ultiple challenges must be addressed when designing an LED package: (i) electrical design challenges: We have to conduct a relatively high-current density through the small LED chip and connect the LED chip to the leads; (ii) optical design challenges: The intensities are very high, because the LED chip is very small and the power emitted by the LED is quite high. And, therefore, we need to handle a very high-optical radiation density; (iii) thermal design challenges: The LED chip inevitably creates heat, and this heat needs to be conducted away; and (iv) mechanical design challenges: includes protecting the LED chip from any external effect, such as moisture or mechanical intrusion. These multiple requirements can be contradictory and can pull the design in different directions.

Id. (internal emphases, citations, and quotations omitted).

The district court held a bench trial and found that Everlight infringed all three patents and had failed to prove by clear and convincing evidence that the asserted claims of the three patents are invalid.[1] *Id.* at *1. Despite finding the patents valid and infringed, the court refused Nichia's request for prospective relief in the form of a permanent injunction. *Id.* The court explained that "Nichia has not demonstrated that Defendants' past and continuing infringement of Nichia's Patents has caused, and will continue to cause, irreparable harm to Nichia." *Id.* It also reasoned that monetary damages could adequately compensate Nichia for Everlight's infringement. The court thus concluded that Nichia was not entitled to injunctive relief. *Id.*

Nichia timely appealed, and Everlight cross-appealed. Nichia appeals the district court's refusal to grant the injunction. Everlight cross-appeals the district court's judgment that Everlight infringes and that it failed to prove the patents invalid with respect to all of the asserted claims of Nichia's three asserted patents. We have jurisdiction under 28 U.S.C. § 1292(c)(2).

DISCUSSION

I.

We begin with Everlight's appeal of the district court's finding that Everlight infringed the asserted claims of Nichia's three patents and its conclusion that Everlight failed to prove those claims invalid by clear and convincing evidence.

We review the court's findings of fact for clear error and its legal conclusions de novo. *Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 961 (Fed. Cir. 2014). "A finding is

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[1] The district court's opinion contains a thorough background of this case and explanation of LED manufacturing technology. *See Nichia*, 2016 WL 310142. This opinion includes an abbreviated recitation of the facts relevant to our disposition.

'clearly erroneous' when although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed." *United States v. U.S. Gypsum Co.*, 333 U.S. 364, 395 (1948). "Where the district court's claim construction relies only on intrinsic evidence, the construction is a legal determination reviewed *de novo*." *Ruckus Wireless, Inc. v. Innovative Wireless Sols., LLC*, 824 F.3d 999, 1002 (Fed. Cir. 2016) (citing *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015)). Infringement is a question of fact. *Golden Blount, Inc. v. Robert H. Peterson Co.*, 438 F.3d 1354, 1361 (Fed. Cir. 2006). "Obviousness is a question of law based on underlying questions of fact." *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007).

A.

We begin with the '250 patent. The district court found claims 1, 7, 17, 19, and 21 of the patent infringed and not proven invalid. Everlight first challenges the court's construction of the claim term "lead" and its finding of infringement under its proposed construction. Second, it challenges the court's construction of "planar" and the court's finding of infringement under either its proposed construction or the court's. Finally, Everlight challenges the court's conclusion that it failed to prove the patent obvious.

1.

The '250 patent is directed to a process for manufacturing LEDs that purportedly improves production efficiency. The patent describes making a continuous sheet of LEDs and separating, or "singulating," them to make the final product. '250 patent col. 2 ll. 49–53. During singulation, LEDs often break. So to reduce breakage, the patent suggests manufacturing LEDs by fitting a lead frame between an upper and lower mold, filling the molds with resin, and then singulating the LEDs. This, the patent suggests, is a "simple and low-cost method for manufacturing, in a short time, multiple light emitting devices which ha[ve] high adhesion between a lead frame and a thermosetting resin composition." *Id.* The district court noted that, "[b]etween 2010 and 2013, Nichia's sales of the products that practice the '250 patent increased from three percent of Nichia's total sales volume, to 27 percent." *Nichia*, 2016 WL 310142, at *24. The court also explained that, "[i]n 2013, Nichia sold over 13.9 billion units, with revenues of $1.7 billion." *Id.*

The '250 patent's first claim is reproduced below:

> 1. A method of manufacturing a light emitting device, the method comprising:
>
> > providing a lead frame comprising at least one notch;
> >
> > plating the lead frame;
> >
> > after plating the lead frame, providing an upper mold on a first surface of the plated lead frame and a lower mold on a second surface of the plated lead frame, and transfer-molding a thermosetting resin containing a light reflecting material in a space between the upper mold and the lower mold to form a resin-molded body; and
> >
> > cutting the resin-molded body and the plated lead frame along the at least one notch to form a resin package, the resin package comprising a resin part and at least one lead, and the cutting step being performed such that an outer surface of the resin part and an outer surface of the at least one lead are planar at an outer side surface of the resin package,

> wherein the plated lead frame is cut so as to form an unplated outer side surface on the lead.

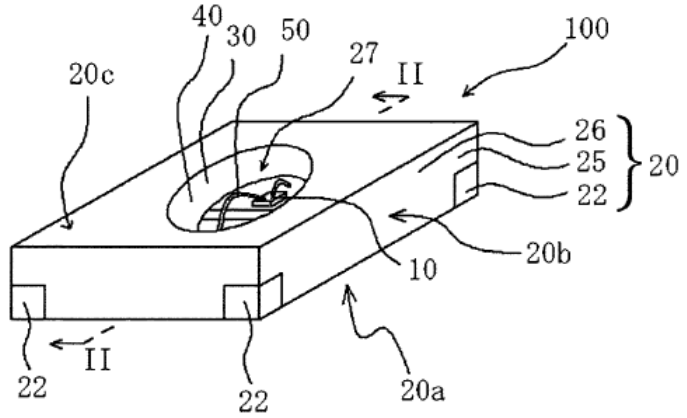
’250 patent col. 19 ll. 37–55.

2.

Everlight argues that the court misconstrued the term “lead” when it interpreted “lead” to mean “the portion of the device that conducts electricity.” J.A. 10054–55. Everlight contends that a lead must be more than simply conductive, it must be “the conductive portion of the device that makes an electrical connection to a structure outside of the device.” J.A. 10054 (originally proposing this construction). The district court rejected Everlight’s request to add a requirement that the lead electrically connect to a structure outside of the device because, while the court “generally agree[d] with the conductive portion of [Everlight’s] construction,” it found “the remaining language problematic and not as concise as the Court’s construction.” J.A. 10056.

We agree with the district court that a lead, as employed in the asserted claims of the ’250 patent, is “the portion of the device that conducts electricity.” The specification discloses leads 22 in Figure 1:

Fig. 1



’250 patent, Fig. 1. The specification explains that “[t]he light emitting element 10 is electrically connected with the leads 22 through wires 50.” *Id.* at col. 6 ll. 20–21. It explains that the lead frame “is formed using an electrical [sic] good conductor such as iron, phosphor bronze or a copper alloy.” *Id.* at col. 9 ll. 21–22. These disclosures explain that the claimed leads conduct electricity. But we find no compelling support in the intrinsic evidence for Everlight’s proposed requirement that the leads conduct electricity from outside the device. We thus agree with the district court that the person of ordinary skill would understand a lead to be “the portion of the device that conducts electricity.”

Because we agree with the court’s construction, and because Everlight does not challenge the court’s finding of infringement under that construction, we affirm the court’s finding that the accused products meet this limitation.

3.

We next turn to Everlight’s contention that the district court misconstrued “planar” when it interpreted the term “planar” as “in a substantially same plane.” J.A. 10069. The ’250 patent’s claims require that “at least one lead [be] planar at an outer side surface of the resin package.”

Everlight argues that “planar” means that there is “no measurable surface variation.” J.A. 10068. Everlight asserts that this construction is mandated by the specification’s distinction between “planar” and “in the same plane.” Everlight Br. 23. Namely, the patent uses “in a substantially same plane” in the specification but “planar” in the claims. The specification states that “a resin part and a lead are formed in a substantially same plane in an outer side surface.” ’250 patent col. 2 l. 63 – col. 3 l. 1. The claims, however, recite “an outer surface of the resin part and an outer surface of the at least one lead are *planar* at an outer side surface." *Id.* at col. 19 ll. 50–52 (claim 1) (emphasis added). Everlight argues that the patent owner's choice to use "in a substantially same plane" in the specification but "planar" in the claims mandates that we treat the two terms differently.

We disagree. First, Everlight's argument implies a rule that we decline to adopt here, namely, that if different words are used in the claim and specification, then we must read that distinction as an intended difference. We recognize that, in some patents, a distinction between terms may imply a difference in meaning, but this is no hard-and-fast rule. Rather, some inventors might use one term in the specification to inform the meaning of another term in the claims. *See SAS Inst., Inc. v. ComplementSoft, LLC.,* 825 F.3d 1341, 1348 (Fed. Cir. 2016). For one word to inform the meaning of another, the words need not be identical. *See id.* For example, in *SAS Institute*, we held that the term "graphical representation of a data flow" in the claims and the term "data flow diagram" in the specification were commensurate in scope. *Id.* So too here. Reading the claims in light of the specification, we conclude that the claimed term "planar" is commensurate in scope with the specification's discussion of "in a substantially same plane." We therefore agree with the court's conclusion that "planar" means "in a substantially same plane."

Because we agree with the court's construction, we next consider Everlight's argument that it does not infringe even under that construction. Everlight Br. 23. Everlight argues that "the outer side surfaces of the three package groups are not 'planar' because each of the outer side surfaces of the LED packages has a significant concave portion." *Id.* at 23–24 (citing J.A. 10347–57). Everlight presents three cross-sectional views of the alleged infringing devices, each showing two leads with flat sections connected by slight concavities.

We find Everlight's argument unconvincing. Under the correct construction, the leads need not be perfectly flat; they need only be "in a substantially same plane" as the outer surface of the resin. The leads here are "in a substantially same plane" as the outer surface of the resin; slight concavities do not mandate a finding otherwise. We thus see no clear error in the court's finding that Everlight's accused products infringe the "planar" limitation.[2]

4.

Everlight also argues it proved the '250 patent invalid for obviousness, despite the district court's holding otherwise. Specifically, Everlight asserts that the patent is rendered obvious by "Hitachi," Japanese Patent Pub. Tokukai No. 2007-235085, in combination with "Sanyo," Japanese Patent Pub. Tokukaihei 2011-191562, or "Glenn," U.S. Patent No. 6,433,277.

Hitachi discloses a method for producing a semiconductor device on a circuit board or lead frame. *Nichia*, 2016 WL 310142, at *8. The district court found that Hitachi failed to disclose several elements of the '250 patent's claims. Claim 1 requires a "notch" and "cutting the resin-molded body and the plated lead frame along the at least one notch to form a resin package," '250 patent col. 19 ll. 47–48 (claim 1), neither of which Hitachi discloses. *Nichia*, 2016 WL 310142, at *17. These findings are supported by expert testimony, J.A. 20797–98 (Schubert), and by Hitachi itself, J.A. 10249 (Fig. 6, showing dicing lines, 20). Indeed, Hitachi is criticized in the ’250 patent’s specification for having a design that results in detachment of the packaging resin from the lead frame during singulation. *See* ’250 patent col. 2 ll. 18–19, 30–35 and Fig. 19(a) (reproduced from Hitachi). The ’250 patent solves this problem by providing a manufacturing method and LED device in which the lead frame has “notch[es]” and “the thermosetting resin is filled in the notch parts, and therefore an adhering area between the lead frame and the thermosetting resin becomes large, so that it is possible to improve adhesion.” *Id.* at col. 3 ll. 8–12. We thus conclude that, despite Everlight’s arguments to the contrary, these findings are not clearly erroneous.

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[2] Everlight also argues that the district court wrongly found it infringed claims 1 and 7 under § 271(g). Because Everlight's products directly infringe claims of the '250 patent under § 271(a), we do not reach whether Everlight also infringed claims under § 271(g).

Everlight argues that it would have been obvious to combine Hitachi with Glenn and Sanyo to achieve the claimed invention. Glenn discloses a method of making packages for integrated circuit dies. *Nichia*, 2016 WL 310142, at *19. Sanyo is directed to a method for producing a semiconductor device. *Id.*

The court found that a person of ordinary skill would not have considered Glenn or Sanyo to modify Hitachi because “the different considerations in the design and manufacture of electronic and optoelectronic [e.g., LED] devices result in substantial differences in the manufacturing processes and materials used in the different technologies,” and “a change in the design or manufacture of an LED or other optoelectronic device requires the consideration of factors—including factors such as light emission, and the effects of heat and emitted radiation on different resins and other materials—that are not relevant to the design and manufacture of electronic semiconductor devices.” *Id.* at *21.

These findings are supported by expert testimony, including Everlight’s expert’s admission that electronic device technology is not particularly relevant to LED technology. J.A. 20543–44. Because the weight of the evidence supports the court's finding that there was no motivation to combine these references, we affirm the court's conclusion that Everlight failed to prove that the '250 patent would have been obvious.

B.

We next examine the '870 patent. Again, Everlight challenges the district court's determination that it infringes and that it did not prove the patent obvious.

1.

The '870 patent discloses an LED design that purportedly minimizes structural problems caused by components expanding and contracting at different rates during thermal cycling. '870 patent col. 1 ll. 38–49. The design is a molded package with "a specific feature, a wall portion," that separates the positive and negative leads. *Nichia*, 2016 WL 310142, at *36 (internal quotation omitted). "[T]his wall portion improves structural integrity, particularly if the device is subject to temperature variations so that package cracking, detachment of the encapsulation material, and warping of the package is reduced or avoided." *Id.* (internal quotation omitted). The package also includes a semiconductor, such as a light emitting semiconductor. Claim 7 is reproduced below:

> 7. A light emitting device comprising:
>
> > a light emitting element;
> >
> > a molded member having a recess formed therein by a bottom surface and a side surface so as to mount said light emitting element in substantially a center of the recess;
> >
> > a positive lead electrode partially disposed on the bottom surface and adjacent to the side surface in the recess and extending outwardly from said molded member;

> a negative lead electrode partially disposed on the bottom surface and adjacent to the side surface in the recess and extending outwardly from said molded member;
>
> means for electrically connecting said light emitting element to said positive lead electrode, and said light emitting element to said negative lead electrode;
>
> wherein a portion of said positive lead electrode and a portion of said negative lead electrode in the recess are separated from each other by a wall portion; wherein said wall portion extends inwardly in a direction toward the center of the recess.

’870 patent col. 35 ll. 22–42.

2.

Everlight argues that its products do not meet the ’870 patent’s requirement that its positive and negative lead electrodes are “partially disposed” on the bottom surface of a recess. Specifically, Everlight claims that the court wrongly defined the “bottom” of the recess in its products. The recess’s bottom, it argues, extends to the uppermost extension of resin. This bottom is a flat line. Everlight does not dispute, however, that shallow gaps in the resin expose the leads.

The court repeatedly rejected Everlight’s position and found the disputed element met. *Nichia*, 2016 WL 310142, at *39–48. In reaching this conclusion, the court repeatedly credited Nichia’s expert. *See, e.g.*, *id.* at *30. We discern no clear error in the court’s conclusion. But even more, we find Everlight’s position belied by the patent itself. The ’870 patent discloses several embodiments where the bottom of the recess is multi-featured. *See, e.g.*, ’870 patent Figs. 1, 6, 11. Despite Everlight’s claim to the contrary, the recess is not flat. *See id.* The bottom of the recess, then, is also not flat. Everlight's straight-line recess oversimplifies the analysis—the recess need not be perfectly flat. In turn, the court correctly concluded that Everlight's products infringe where the leads are exposed through gaps in the resin. Everlight's products include these gaps, and thus the district court properly concluded that the products meet this claim limitation. As Everlight brings no other challenge on this issue, we affirm the district court as to Everlight's infringement of the '870 patent.

3.

Everlight also challenges the court's conclusion that it failed to prove the '870 patent invalid. Everlight had asserted that the ordinary artisan would have combined "Waitl," U.S. Patent No. 6,624,491, and "Nitta," U.S. Patent No. 6,747,293, to render the '870 patent claims obvious. Everlight first challenges the court's conclusion that Waitl does not disclose all of the claim elements. It second challenges the court's conclusion that the artisan would not have looked to Nitta to remedy Waitl's deficiencies.

Waitl notes that separation can result when different materials expand at different rates, so it teaches designs to help minimize separation. *Nichia*, 2016 WL 310142, at *49. Entitled "diode housing," Waitl "is directed to problems in the operation of a device stemming from delamination—a situation in which the 'window' encapsulant material separates from the metal frame of the device." *Id.*

Waitl's device includes a lead electrode with a single exposed area, *id.*, but the claims require the lead electrode to have two exposed portions, one positive and one negative, separated by a wall. The court found that Waitl failed to disclose elements related to these positive and negative electrodes as claimed in the '870 patent. Everlight does not challenge the court's reading of Waitl.

Everlight instead argues that a person of ordinary skill in the art would have been motivated to modify Waitl in light of Nitta to achieve the claimed invention. Nitta appears to disclose a wall between two electrodes, as it is directed to a light emitting device with a "plurality of chips efficiently disposed" in a housing with a "lead having a slit formed between a portion for bonding a wire to and a portion for mounting chips on, thereby to prevent extrusion of an adhesive and eliminate defective bonding." *Id.* at *50 (quoting Nitta, Abstract).

But the court found that a person of ordinary skill in the art would have had no motivation to modify Nitta in light of Waitl. We agree. The court found that the references disclose different structures, resolve dissimilar problems, and propose dissimilar solutions. *Id.* at *51–53. The court's conclusion derives further support from its earlier finding that artisans in this field face myriad design challenges because small design changes may cause unpredictable results and because design considerations often pull in multiple directions. *Id.* at *4. We determine that the court's finding on motivation to combine is not clearly erroneous. We thus affirm the district court's conclusion that Everlight failed to prove the '870 patent invalid as obvious.

C.

We now reach the '589 patent, the third and final patent Nichia asserted against Everlight. The court found Everlight infringed claims 1 and 2 of the '589 patent and that Everlight had failed to prove the patent invalid. Everlight again appeals the court's holdings on infringement and validity.

1.

The '589 patent is also directed to the design of a semiconductor device. The disclosed design seeks to prevent adhesive from overflowing into other areas of the device.

Specifically, the ’589 patent states that “an object of the present invention is to provide a semiconductor device wherein the adhesive components do not overflow nor leak to the wire bonding area even when . . . adhesive components having low surface tension [are] used in the adhesive layer for die bonding, and the overflow and leak preventing function can be maintained satisfactorily even when the device is made smaller and thinner.” ’589 patent col. 2 ll. 60–67. Claim 1 of the ’589 patent requires the following:

> 1. A semiconductor device comprising:
>
> a semiconductor element having a pair of electrodes;
>
> a housing having a recess for accommodating the semiconductor element;
>
> a first lead electrode and a second lead electrode exposed on the bottom surface of said recess;
>
> an adhesive layer for die bonding between the semiconductor element and the first lead electrode; and
>
> electrically conductive wires for wire bonding between one electrode of the pair of electrodes of the semiconductor element and the first lead electrode and between the other electrode and the second lead electrode;
>
> wherein the housing has at least one wall formed to extend across the bottom surface of the recess so as to divide the surface of the first lead electrode into a die bonding area and a wire bonding area;
>
> the first lead electrode has a notch which is formed by cutting off a portion of an edge of

> the first lead electrode and located at least just below the wall; and
>
> the wall and the bottom portion of said housing are connected to each other through the notch.

Id. at col. 15 l. 59 – col. 16 l. 13.

2.

Everlight challenges the court's finding that it infringes the '589 patent with the same arguments that it made against its infringement of the '870 patent. Everlight Br. 32–33. For the same reasons we affirmed the court's infringement finding with respect to the '870 patent, we affirm its finding of infringement with respect to the '589 patent. *See*, *supra*, Discussion B.2.

3.

Everlight also challenges the court's conclusion that it did not prove the '589 patent invalid by asserting that it would have been obvious to a person of ordinary skill in light of "Nakashima," U.S. Patent Pub. No. 2004/0256706, and "Kim," U.S. Patent Pub. No. 2006/0170083.

Nakashima discloses "a molded package for an LED device that reduces the likelihood of delamination—that is, detachment of the encapsulating resin from the package." *Nichia*, 2016 WL 310142, at *32. The device has a circular recess and three exposed metal members. *Id.* The court found that Nakashima failed to disclose a wall that divides the surface of a lead electrode, a notch in the lead, and a few other claimed features. *Id.* at *33.

Kim discloses a side-view LED designed to enhance the flow of resin into the side wall. *Id.* at *34. Kim explains that, to achieve these dimensions, "endeavors have been made to reduce the thickness of the upper and lower wall parts around an LED window. However, reducing the wall part thickness is an extremely difficult task. This task also potentially weakens wall strength thereby failing to ensure reliability." *Id.* (quoting Kim, ¶ [0006]). The court found Kim failed to meet several of the '589 patent's claimed features, including having a wall across the bottom of the recess. *Id.* at *34–35.

The court also found that a person of ordinary skill in the art would not have been motivated to combine Nakashima and Kim. Specifically, it found that the two references "are not directed to similar packages," and "describe different structures": "Kim relates to thin, side-view LEDs, while Nakashima relates to a top-view LED with a recess that includes three metal members partially covered by a wall portion." *Id.* at *35. Moreover, the court found that the two references "address different problems in packaging structures and disclose different solutions": "Kim contemplates that the structure that promotes resin flow will be embedded in the body of the package itself," while "Nakashima is concerned about delamination of the encapsulant material as a result of different coefficients of thermal expansion among the different package materials." *Id.* We conclude that these findings are not clearly erroneous and are supported by the weight of the evidence. *See, e.g.*, J.A. 20785–86. We thus affirm the district court's conclusion that one of ordinary skill in the art would not have been motivated to combine these two references and thus the references did not render the '589 patent obvious.

II.

Finally, Nichia challenges the district court's decision to deny its request for permanent injunctive relief. The district court held that Nichia failed to show that it had suffered irreparable harm and that remedies at law provided Nichia inadequate compensation. *Nichia*, 2016 WL 310142, at *65–67. Nichia challenges both conclusions. Because we affirm the court's conclusion on irreparable harm, we do not reach the adequacy of monetary damages.

A.

We review a district court's grant or denial of a permanent injunction for an abuse of discretion. *Robert Bosch LLC v. Pylon Mfg. Corp.*, 659 F.3d 1142, 1149 (Fed. Cir. 2011). "We may find an abuse of discretion on a showing that the court made a clear error of judgment in weighing relevant factors or exercised its discretion based upon an error of law or clearly erroneous factual findings." *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1379 (Fed. Cir. 2008) (internal quotation marks omitted).

A permanent injunction is an equitable remedy. *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 311 (1982). "It 'is not a remedy which issues as of course,' or 'to restrain an act the injurious consequences of which are merely trifling.'" *Id.* (citation omitted) (quoting *Harrisonville v. W.S. Dickey Clay Mfg. Co.*, 289 U.S. 334, 337–38 (1933) and *Consol. Canal Co. v. Mesa Canal Co.*, 177 U.S. 296, 302 (1900)).

"According to well-established principles of equity, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief." *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006). A party seeking an injunction must demonstrate: "(1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction." *Id.*

Historically, "courts have granted injunctive relief upon a finding of infringement in the vast majority of patent cases." *Id.* at 395 (Roberts, J., concurring). That this long history exists "is not surprising" given the nature of patent rights. *Id.* Patent rights are property rights, and central to those rights is the right to exclude. *Florida Prepaid Postsecondary Educ. Expense Bd. v. Coll. Sav. Bank*, 527 U.S. 627, 642–43 (1999); *see also* Thomas W. Merrill, *Property and the Right to Exclude*, 77 Neb. L. Rev. 730, 740–52 (1998) (discussing the "primacy of the right to exclude"). The Supreme Court often reaffirms this principle—that "the right to exclude others" is "one of the most essential sticks in the bundle of rights that are commonly characterized as property." *Kaiser Aetna v. United States*, 444 U.S. 164, 176 (1979); *see also Dolan v. City of Tigard*, 512 U.S. 374, 384 (1994); *Nollan v. Cal. Coastal Comm'n*, 483 U.S. 825, 831 (1987). Our court has similarly observed that "[w]hile a patentee is not entitled to an injunction in every case, 'it does not follow that courts should entirely ignore the fundamental nature of patents as property rights granting the owner the right to exclude.'" *Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, 702 F.3d 1351, 1363 (Fed. Cir. 2012) (quoting *Robert Bosch,* 659 F.3d at 1149).

But an injunction in patent law must be justified like any other: "the moving party must satisfy the court that relief is needed." *United States v. W. T. Grant Co.*, 345 U.S. 629, 633 (1953). The movant must prove that it meets all four equitable factors. *i4i Ltd. P'ship v. Microsoft Corp.*, 598 F.3d 831, 861 (Fed. Cir. 2010). And it must do so on the merits of its particular case. *eBay*, 547 U.S. at 391.

B.

Nichia challenges the district court's finding that it failed to establish that it will suffer irreparable harm absent an injunction. The court's conclusion relied on several findings, each weighing against Nichia. Specifically, the court found that "[t]he record shows an absence of meaningful competition." *Nichia,* 2016 WL 310142, at *65. It found that Nichia had "failed to establish past irreparable harm, or the likelihood of irreparable harm in the future based on lost sales" or "based on price erosion." *Id.* at *66. It found that Nichia's licensing of the patents to major competitors suggested that harm from "infringement of the patents-in-suit is not irreparable." *Id.* And it found that Nichia's licensing practices have made "multiple low-priced non-infringing alternatives from competitors available to replace the accused Everlight products if such products were not available." *Id.* Nichia contests these findings.

Nichia first argues that the court abused its discretion when it found a lack of "meaningful competition" between the parties. Nichia asserts that the court should have deferred to the parties' stipulation that "Nichia and Everlight are competitors." J.A. 2112, ¶ 148. It further claims that the trial record "abounds" with Everlight documents identifying Nichia as a competitor. Nichia Br. 34. It points to internal Everlight documents identifying Nichia as a competitor, J.A. 2222, 2466–69, 3007–08, and an Everlight Annual Report identifying Nichia as a "major competitor," J.A 2783–84, 2788. And it argues that Everlight stipulated that it targeted some of Nichia's customers with offers to sell infringing products. J.A. 2113–14, ¶¶ 158–64. Nichia contends that these showings undermine the district court's finding that Nichia and Everlight are not meaningful competitors.

Nichia also argues that the court misunderstood the LED market. Nichia claims that this market is a "design-win" market where customers require suppliers like Everlight and Nichia to "design-in" a product before receiving an order. J.A. 20254–61 (Swenson); J.A. 20424 (Kammerer); J.A. 20304 (Liu) ("For the end customer, there—there has to be some sort of design-in before there's an order."); J.A. 20315 (Liu) ("You—you have to get designed-in to be able to get an order."). During the "design in" process, customers test and certify LEDs, which leads to a reticence to substitute competing LEDs for the product's life cycle. Nichia argues that this characteristic of the LED market makes it likely that infringement will cause long-term, irreparable harm.

We disagree, not because we question the facts as Nichia presents them, but because the court heard these arguments as the original finder of fact and concluded to the contrary, carefully weighing both parties' evidence. The court found that Nichia is an LED chip manufacturer as well as a packager, "while Everlight is solely an LED packager." *Nichia*, 2016 WL 310142, at *53. The court also found that the two companies generally sell to different parties: "Everlight generally sells to distributors rather than directly to customers, as Nichia does." *Id.* Moreover, despite the parties' stipulation that they competed in the same market, J.A. 2112, ¶ 148, the court found that Nichia failed to prove that this competition was meaningful, *Nichia*, 2016 WL 310142, at *65. The court explained that Everlight's competition accounted for "the proverbial 'drop in the bucket,'" when compared to Nichia's total sales. *Id.* Nichia identified 516 sales opportunities, with Everlight as a competitor in only 3. *Id.* In light of these findings, the court noted that there was "a very small area of possible competition," but it concluded that there was an "absence of actual competition." *Id.* The court closed its market-competition analysis by observing that the "justification for an injunction is remote indeed." *Id.*

The court also disagreed with Nichia's contention that it would suffer future irreparable harm because of past lost sales. *Id.* at *66. The court found that Nichia "failed to establish that [Everlight was] responsible for causing a single lost sale in the U.S." *Id.* Nichia claimed one instance of a lost sale, but the court concluded that the evidence showed "several other formidable, lower-priced, and licensed competitors for the same opportunity." *Id.* Additionally, Nichia's expert "admitted he made no attempt to establish 'but for' causation that Nichia America would have made the sale . . . in the absence of Everlight's claimed infringement." *Id.* In short, Nichia did not prove that it had suffered even a single lost sale from Everlight's infringement.

Nichia also had alleged that it suffered price erosion because of Everlight's infringement in a sale to General Electric. While Nichia eventually won the GE contract, it sold its products at a price lower than it originally offered. J.A. 20266–69. Nichia presented evidence that it had lowered its price to compete against Everlight's infringement and that this infringement caused this price erosion.

The court disagreed. *Nichia*, 2016 WL 310142, at *66. It explained that Nichia's lower-price sale to GE had been required by GE, so "Nichia was going to have to lower its prices, regardless of Everlight's competition." *Id.* Further, the court found that several licensed competitors had offered products at lower prices, independent of Everlight, which drove down prices. The court further pointed to Nichia's admission that it had already sold LEDs at the lower price to GE's competitors in the same period and that this lower price made it "impossible to maintain" a higher price with GE. *Id.* And the court credited Nichia's expert's admission that the evidence was insufficient to establish price erosion and that he did not attempt a price-erosion analysis. The court concluded that, in light of these evidentiary deficiencies, Nichia "cannot establish that Everlight was the 'but for' cause of its claimed price erosion." *Id.* We find no clear error in the court's finding that Nichia failed to establish price erosion from Everlight's infringement.

Nichia further contests the court's findings with respect to Nichia's licensing activities. Nichia argues that the court wrongly found that its licensing activities precluded a finding of irreparable harm. Nichia argues that the court's decision is contrary to settled law, as it applies a categorical rule that licenses preclude irreparable harm.

To the extent the court adopted a categorical rule, we agree with Nichia; such a rule would run afoul of our precedent. We have explained, for example, that "[a] plaintiff's past willingness to license its patent is not sufficient per se to establish lack of irreparable harm if a new infringer were licensed." *Acumed LLC v. Stryker Corp.*, 551 F.3d 1323, 1328 (Fed. Cir. 2008) (citing *eBay,* 547 U.S. at 393).

But to the extent that the court found that Nichia's prior licenses weighed against a finding of irreparable harm, we countenance that approach. While evidence of licensing activities cannot establish a lack of irreparable harm per se, that evidence can carry weight in the irreparable-harm inquiry. We have previously explained that "[t]he fact of the grant of previous licenses, the identity of the past licensees, the experience in the market since the licenses were granted, and the identity of the new infringer all may affect the district court's discretionary decision concerning whether a reasonable royalty from an infringer constitutes damages adequate to compensate for the infringement." *Id.* The court's findings on licensing traversed these considerations. The court found that several of Nichia's licenses were to "significant competitors" who posed "major threats" to Nichia's flagship products. *Nichia*, 2016 WL 310142, at *66. And the court found that these licenses changed the market by making available "multiple low-priced non-infringing alternatives." *Id.* These findings, the court concluded, supported a finding that "Nichia ha[d] failed to establish it will suffer irreparable harm in the absence of an injunction." *Id.*

In any event, regardless of the court's analysis of the licenses, we note that the court treated Nichia's licenses as an independent ground for denying the injunction. *Id.*

It did not rely on Nichia's licenses in its earlier analysis of irreparable harm, but rather found the licenses to further bolster its prior finding. *Id.* The court's licensing analysis thus does not undermine its separate findings that Nichia failed to establish market competition, lost sales, and price erosion, and that these failures all weigh against a conclusion that Nichia would suffer irreparable harm absent an injunction. *Id.*

We discern no clear error in the district court's finding that Nichia failed to prove that it would suffer irreparable harm absent the injunction. On that traditional equitable factor, Nichia did not bear its burden. *See W. T. Grant Co.*, 345 U.S. at 633. Because Nichia failed to establish one of the four equitable factors, the court did not abuse its discretion in denying Nichia's request for an injunction.

CONCLUSION

We discern no error in the court's conclusions that Everlight infringed all asserted claims and failed to prove those claims invalid by clear and convincing evidence. We also conclude that the court did not abuse its discretion in denying Nichia's request for a permanent injunction. We therefore affirm.

AFFIRMED

COSTS

No costs.